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PREFACE

The National and International Conference on “Shaping the Future of Education,” held on 1 April 2026, brings together educators, researchers, policymakers, and practitioners from diverse backgrounds to explore innovative approaches and emerging trends in education. In an era marked by rapid technological advancement, shifting societal needs, and global interconnectedness, education systems must continuously adapt to prepare learners for the challenges and opportunities of the future.

This conference serves as a platform for the exchange of knowledge, ideas, and best practices that contribute to the transformation of education across local and global contexts. The selected papers included in these proceedings reflect a wide range of perspectives, addressing key themes such as digital learning, educational equity, curriculum innovation, teacher development, and lifelong learning.

We extend our sincere appreciation to all authors for their valuable contributions, as well as to the reviewers and organizing committee for their dedication and commitment to maintaining the academic quality of this conference. Their collective efforts have ensured that these proceedings represent meaningful and impactful scholarly work.

It is our hope that the insights presented in this volume will inspire further research, foster collaboration, and support the ongoing development of education systems that are inclusive, resilient, and forward-looking.

Conference Organizing Committee
1 April 2026

EMBEDDING VISIBLE LEARNING IN GRADUATE EDUCATION: A PRACTICE-BASED IMPLEMENTATION OF ASSESSMENT FOR LEARNING

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Abstract

This study presents a practice-based implementation of Visible Learning principles within a graduate-level course, 0308513 Assessment for Learning and Educational Quality Assurance. The study was conducted as part of regular classroom instruction with 30 master's students over an eight-week period (Weeks 8–15) of the semester.

The instructional design was guided by Visible Learning and Assessment for Learning (AfL) principles, emphasizing clear learning intentions, success criteria, feedback, and student engagement in learning processes. The implementation was aligned with the course specifications (TQF3), ensuring consistency with intended learning outcomes and instructional structure.

A mixed-methods approach was employed to examine learning processes, including student perception data, self-regulated learning indicators, and classroom observations. The findings indicate that embedding Visible Learning within routine teaching practices supports active student engagement, enhanced feedback use, and promoted self-regulated learning processes.

This study contributes by demonstrating how Visible Learning can be operationalized in authentic graduate classroom contexts through structured instructional design. The findings highlight the importance of integrating feedback, reflection, and learner participation to support meaningful learning in higher education.

The findings indicate high levels of student engagement and positive perceptions ($M > 4.40$) across key dimensions.

Keywords: Visible Learning; Assessment for Learning; Higher Education; Feedback Literacy; Self-Regulated Learning; Instructional Design

1. Introduction

Visible Learning has become one of the most influential frameworks in contemporary education, emphasizing the importance of making learning processes explicit and measurable for both teachers and students (Hattie, 2009, 2012). The framework highlights that effective teaching is not merely about delivering content but about ensuring that learning is visible—where learners understand what they are learning, why they are learning it, and how well they are progressing.

Central to Visible Learning is the concept of feedback, which has been identified as one of the most powerful influences on student achievement (Hattie & Timperley, 2007). Feedback enables learners to close the gap between current and desired performance, guiding them toward improvement. This aligns closely with the principles of Assessment for Learning (AfL), which emphasize the use of assessment as an integral part of the learning process (Black & Wiliam, 2009; Wiliam, 2011).

Despite strong theoretical support, the practical implementation of Visible Learning and AfL remains inconsistent, particularly in higher education. Many classrooms continue to rely on summative assessment practices, limiting opportunities for feedback and student engagement (Carless & Boud, 2018; OECD, 2024). This gap between theory and practice highlights the need for context-sensitive approaches that embed these principles within routine teaching.

In graduate education, the challenge is even more pronounced. Students are expected to engage in higher-order thinking, research-based learning, and reflective practice, yet instructional approaches often do not fully support these processes. There is therefore a need for instructional designs that promote active learning, feedback use, and self-regulated learning.

This study addresses this need by examining the implementation of Visible Learning within a graduate-level course. Rather than adopting an experimental design, the study focuses on a practice-based approach, exploring how Visible Learning can be embedded within authentic classroom contexts aligned with course requirements.

The study aims to provide both theoretical and practical insights into how Visible Learning can support meaningful learning processes in higher education.

2. Literature Review

2.1 Visible Learning

Visible Learning has emerged as a highly influential framework for understanding and improving effectiveness by making the processes of teaching and learning explicit and evaluable (Hattie, 2009, 2012, 2023). The central premise of Visible Learning is that learning becomes more effective when both teachers and students have a clear understanding of learning goals, success criteria, and the impact of instructional practices. In this framework, teachers are conceptualized as evaluators of their own teaching, while students are positioned as active agents who monitor and regulate their learning.

A key contribution of Visible Learning lies in its emphasis on "visible teaching and visible learning," where the success of instruction is determined by its impact on student learning rather than by the delivery of content alone (Hattie, 2012). This perspective shifts the focus from teaching activities to learning outcomes, highlighting the importance of evidence-informed practice and continuous evaluation of instructional effectiveness.

Core components of Visible Learning include learning intentions, success criteria, feedback, and teacher clarity. Learning intentions provide students with a clear understanding of what they are expected to learn, while success criteria define what quality performance looks like. Teacher clarity has been identified as a critical factor in effective instruction, as it supports students in understanding expectations and aligning their learning efforts accordingly (Hattie, 2023). Among these components, feedback has consistently been identified as one of the most powerful influences on student achievement (Hattie & Timperley, 2007).

Feedback within the Visible Learning framework is conceptualized as a process that helps learners answer three key questions: "Where am I going?", "How am I going?", and "What are

the next steps?" (Hattie & Timperley, 2007). These questions support learners in identifying gaps between current and desired performance and in taking action to improve their learning. More recent research further emphasizes that the effectiveness of feedback depends not only on its quality but also on learners' ability to interpret and use it productively (Carless & Boud, 2018; Molloy et al., 2020; Boud et al., 2024).

Recent developments in Visible Learning research have extended its application to more complex and diverse educational contexts, including higher education. Studies indicate that the principles of clarity, feedback, and learner engagement remain highly relevant in university settings, although their implementation requires adaptation to disciplinary and contextual differences (Hattie, 2023; Viberg et al., 2024). In particular, the integration of Visible Learning with formative assessment practices has been identified as a promising approach for enhancing student engagement and promoting deeper learning.

Furthermore, contemporary research highlights the role of Visible Learning in supporting self-regulated learning (SRL). By making learning goals explicit and providing continuous feedback, Visible Learning creates conditions that enable students to monitor their progress, reflect on their performance, and adjust their learning strategies (Panadero et al., 2018; Broadbent & Poon, 2024). These processes are particularly important in higher education, where learners are expected to take greater responsibility for their learning.

Despite its strong theoretical foundation, the implementation of Visible Learning remains challenging in practice. Teachers may face difficulties in translating abstract principles into concrete instructional strategies, particularly within time-constrained and curriculum-driven environments. This challenge is especially evident in higher education, where instructional practices are often less structured and more content-driven (Carless & Boud, 2018; OECD, 2024).

Therefore, there is a growing need for context-sensitive approaches that operationalize Visible Learning within authentic classroom settings. Embedding Visible Learning within structured instructional design, particularly when aligned with Assessment for Learning (AfL), offers a practical pathway for bridging the gap between theory and practice. Such integration enables the development of feedback-rich learning environments that support student engagement, self-regulated learning, and meaningful learning outcomes.

2.2 Assessment for Learning (AfL)

Assessment for Learning (AfL) represents a paradigm shift in educational assessment, positioning assessment as an integral component of the learning process rather than as a mechanism for measuring achievement alone (Black & Wiliam, 2009; Wiliam, 2011). Within this perspective, assessment is used continuously to generate evidence about student learning, which is then interpreted and used to inform teaching decisions and support learner progress.

AfL is characterized by a set of interconnected practices that include eliciting evidence of learning, providing feedback, and engaging students in self- and peer-assessment. These practices are embedded within everyday classroom interactions, creating a dynamic process in which teaching, learning, and assessment are closely aligned (Wiliam, 2011). Rather than being implemented as isolated techniques, AfL functions as a coherent pedagogical approach that emphasizes responsiveness to learner needs and the continuous adjustment of instruction.

A central element of AfL is feedback, which has been widely recognized as one of the most powerful influences on student learning (Hattie & Timperley, 2007). In AfL, feedback is not limited to information provided by the teacher but is conceptualized as a dialogic process involving multiple sources, including peers and the learners themselves (Carless & Boud, 2018). Effective feedback supports learners in understanding their current level of performance, identifying gaps in their learning, and determining appropriate next steps.

Recent developments in the field have expanded the concept of feedback to include the notion of feedback literacy, which refers to learners' capacity to understand, interpret, and use feedback effectively (Carless & Boud, 2018; Molloy et al., 2020). Feedback literacy encompasses cognitive, affective, and behavioral dimensions, including making sense of feedback, managing

emotional responses, and applying feedback to improve performance. This shift highlights that the effectiveness of feedback depends not only on its quality but also on learners' active engagement with it.

Emerging research further emphasizes that feedback should be understood as a process rather than a product (Boud et al., 2024). In this view, feedback is effective when learners actively participate in feedback cycles, using information to revise their work and refine their learning strategies. This aligns with the broader emphasis in AfL on learner agency and active participation in the assessment process.

AfL has also been closely linked to the development of self-regulated learning (SRL). Through practices such as self-assessment and peer assessment, learners are encouraged to set goals, monitor their progress, and reflect on their learning (Panadero et al., 2018; Schunk & Greene, 2018). These processes support the development of metacognitive skills and learner autonomy, which are essential for meaningful and sustained learning, particularly in higher education contexts (Broadbent & Poon, 2024).

In higher education, the implementation of AfL presents both opportunities and challenges. While AfL has the potential to enhance student engagement and promote deeper learning, its integration into university teaching requires careful alignment with course design, assessment structures, and institutional expectations (Carless & Boud, 2018; Viberg et al., 2024). Traditional assessment practices, which often prioritize summative evaluation, may limit opportunities for ongoing feedback and learner involvement (OECD, 2024).

Therefore, there is a growing need for approaches that embed AfL within authentic classroom practice, ensuring that assessment is integrated into the flow of teaching and learning rather than treated as a separate activity. When aligned with frameworks such as Visible Learning, AfL provides a powerful mechanism for creating feedback-rich learning environments that support student engagement, self-regulated learning, and continuous improvement.

2.3 Self-Regulated Learning (SRL)

Self-regulated learning (SRL) refers to learners' active involvement in their own learning processes through goal-setting, strategic action, monitoring, and reflection (Zimmerman, 2002; Pintrich, 2004; Panadero et al., 2018). Rather than being passive recipients of knowledge, self-regulated learners are characterized by their ability to plan their learning activities, regulate their cognitive and motivational processes, and evaluate their progress toward learning goals.

Foundational models of SRL conceptualize learning as a cyclical process consisting of three interrelated phases: forethought, performance, and self-reflection (Zimmerman, 2002). During the forethought phase, learners set goals and plan strategies; during the performance phase, they monitor their understanding and regulate their efforts; and during the reflection phase, they evaluate outcomes and adjust their approaches for future learning. This cyclical process highlights the dynamic and iterative nature of self-regulated learning.

SRL is particularly important in higher education, where students are expected to take increasing responsibility for their learning. Graduate-level learners are required to engage in complex tasks such as critical analysis, research-based inquiry, and reflective practice. These demands necessitate the development of metacognitive skills and learner autonomy, which are central components of SRL (Schunk & Greene, 2018).

A substantial body of research has demonstrated that formative assessment plays a critical role in supporting SRL. Assessment for Learning (AfL) practices—such as feedback, self-assessment, and peer assessment—provide learners with opportunities to monitor their progress, reflect on their performance, and make informed adjustments to their learning strategies (Panadero et al., 2018; Nicol & Macfarlane-Dick, 2006). Feedback has been identified as a key mechanism through which learners regulate their learning, as it provides information about the gap between current and desired performance (Hattie & Timperley, 2007).

Recent research further highlights that the effectiveness of SRL depends on learners' ability to engage actively with feedback. Studies indicate that students who demonstrate higher levels

of feedback use are more likely to exhibit self-regulatory behaviors, such as goal-setting, monitoring, and reflection (Carless & Boud, 2018; Boud et al., 2024). This has led to increasing recognition of the relationship between feedback literacy and SRL, where the capacity to interpret and apply feedback becomes a critical component of self-regulated learning.

Moreover, contemporary studies in higher education emphasize that SRL is influenced not only by individual learner characteristics but also by the design of the learning environment. Structured instructional approaches that incorporate clear learning goals, ongoing feedback, and opportunities for reflection have been shown to support the development of SRL (Broadbent & Poon, 2024; Viberg et al., 2024). These findings suggest that SRL can be fostered through intentional instructional design rather than being treated solely as an individual learner trait.

The integration of SRL with frameworks such as Visible Learning and AfL provides a comprehensive approach to supporting student learning. Visible Learning emphasizes clarity and feedback, while AfL provides the mechanisms through which learners engage with assessment processes. Together, these frameworks create conditions that enable learners to develop self-regulatory skills, engage in reflective practice, and take ownership of their learning.

However, despite its importance, the development of SRL remains a challenge in many educational contexts. Students may lack the necessary skills to effectively plan, monitor, and evaluate their learning, particularly in environments where feedback is limited or not effectively used (OECD, 2024). This underscores the need for instructional models that explicitly support SRL through structured feedback processes and opportunities for reflection.

Therefore, fostering SRL requires a deliberate integration of pedagogical strategies that promote learner engagement, feedback use, and metacognitive development. Embedding these elements within authentic classroom practice offers a promising pathway for supporting meaningful and sustained learning in higher education.

2.4 Visible Learning in Higher Education

Although Visible Learning has been widely applied and studied in school education, its application in higher education remains relatively underexplored. Most of the research on Visible Learning has focused on primary and secondary classroom contexts, where instructional structures are more standardized and teacher-directed (Hattie, 2009, 2012). In contrast, higher education presents more complex and diverse learning environments, requiring adaptation of Visible Learning principles to suit disciplinary differences, learner autonomy, and less structured instructional settings.

Recent studies suggest that the implementation of Visible Learning in higher education requires a shift from teacher-centered delivery toward learner-centered and feedback-oriented approaches (Hattie, 2023; Viberg et al., 2024). University classrooms often emphasize content coverage and summative assessment, which can limit opportunities for making learning processes explicit and for engaging students in feedback and reflection (Carless & Boud, 2018; OECD, 2024). As a result, key elements of Visible Learning—such as clarity of learning goals, success criteria, and ongoing feedback—are not always systematically integrated into higher education teaching practices.

Research has increasingly highlighted the importance of adapting Visible Learning principles to support active learning and student engagement in university settings. In particular, the integration of Visible Learning with Assessment for Learning (AfL) has been identified as a promising approach for enhancing learning processes. AfL provides practical mechanisms—such as formative feedback, self-assessment, and peer interaction—that operationalize the core principles of Visible Learning within classroom practice (Wiliam, 2011; Carless & Boud, 2018).

Furthermore, studies in higher education emphasize the role of feedback-rich environments in promoting deeper learning and self-regulated learning (SRL). When students are provided with clear learning expectations and opportunities to engage in feedback cycles, they are more likely to develop metacognitive awareness and take ownership of their learning (Panadero et al., 2018; Broadbent & Poon, 2024). These findings suggest that Visible Learning, when effectively

implemented, can support the development of SRL and higher-order thinking skills in university contexts.

Recent research also points to the importance of instructional design in enabling the successful implementation of Visible Learning in higher education. Structured learning environments that integrate learning intentions, success criteria, feedback, and reflection have been shown to enhance student engagement and learning outcomes (Viberg et al., 2024). However, such integration requires careful alignment with course design, assessment structures, and institutional frameworks, particularly in contexts where traditional assessment practices dominate.

Despite these advances, there remains a lack of empirical studies that examine how Visible Learning can be embedded within authentic higher education classroom practice, particularly in graduate-level courses. Much of the existing research focuses on conceptual discussions or small-scale interventions, rather than sustained implementation within real instructional settings. This highlights a significant gap in the literature regarding how Visible Learning can be operationalized in ways that are both pedagogically meaningful and practically feasible.

In response to this gap, this study examines the implementation of Visible Learning within a graduate-level course, focusing on how its principles can be embedded within routine teaching practice. By integrating Visible Learning with AfL and aligning it with course requirements, the study aims to provide a context-sensitive model that supports student engagement, feedback use, and self-regulated learning in higher education.

This approach contributes to the growing body of research that seeks to bridge the gap between theory and practice, demonstrating how Visible Learning can be translated into actionable instructional strategies within authentic classroom environments.

Conceptual Framework

This study is grounded in an integrated conceptual framework that combines principles of Visible Learning, Assessment for Learning (AfL), and self-regulated learning (SRL) to explain how instructional design influences student learning processes in higher education contexts.

At the core of the framework is Visible Learning, which emphasizes the importance of making learning processes explicit through clear learning intentions, success criteria, and ongoing feedback (Hattie, 2009, 2012, 2023). Visible Learning provides the foundational structure for instructional clarity, ensuring that students understand what they are expected to learn and how their learning will be evaluated.

Building upon this foundation, Assessment for Learning (AfL) functions as the primary pedagogical mechanism through which learning is supported. AfL integrates assessment into the learning process by eliciting evidence of student understanding, providing feedback, and engaging learners in self- and peer-assessment (Black & Wiliam, 2009; Wiliam, 2011). Within this framework, feedback is conceptualized as a continuous and dialogic process that guides learners in identifying gaps between their current and desired performance (Carless & Boud, 2018; Boud et al., 2024).

The interaction between Visible Learning and AfL creates a feedback-rich learning environment characterized by iterative cycles of learning. These cycles involve clarifying goals, generating evidence of learning, receiving and interpreting feedback, and engaging in reflection. Such iterative processes are central to the development of meaningful learning, as they enable learners to continuously adjust their understanding and strategies.

Self-regulated learning (SRL) represents the key learning outcome within this framework. SRL refers to learners' ability to plan, monitor, and evaluate their learning through cyclical processes of forethought, performance, and reflection (Zimmerman, 2002; Panadero et al., 2018). The framework proposes that SRL emerges from sustained engagement in feedback and reflection processes, which are facilitated by the integration of Visible Learning and AfL.

In this model, student engagement and feedback use function as critical mediating mechanisms. Research suggests that the effectiveness of feedback depends not only on its quality but also on learners' ability to interpret and apply it (Carless & Boud, 2018; Molloy et al., 2020).

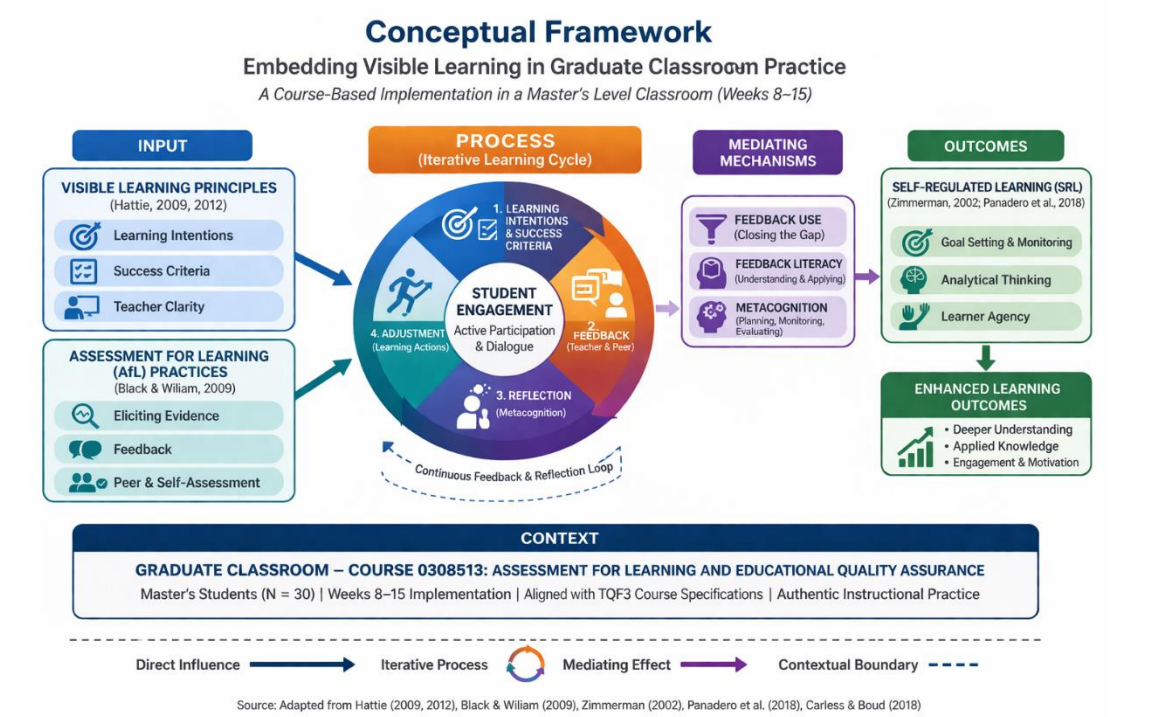
Therefore, active engagement in feedback processes is essential for transforming feedback into learning.

The framework is situated within the context of higher education, where learning environments are complex and learners are expected to demonstrate autonomy and higher-order thinking. In such contexts, structured instructional design plays a crucial role in enabling the effective implementation of Visible Learning and AfL principles (Viberg et al., 2024; Broadbent & Poon, 2024).

Accordingly, this study conceptualizes instructional design as the starting point of the learning process, where Visible Learning principles are operationalized through AfL practices. These practices create iterative learning cycles that foster engagement, feedback use, and reflection, ultimately leading to the development of self-regulated learning.

This conceptual framework provides the basis for examining how Visible Learning can be embedded within authentic classroom practice. It also guides the design and implementation of the instructional model, as well as the interpretation of findings in relation to student learning processes.

Figure 1 presents the conceptual framework guiding this study.



3. Methodology

3.1 Approach

This study adopted a practice-based, mixed-methods approach, informed by the principles of design-based research (DBR), to examine the implementation of Visible Learning within an authentic graduate classroom context (McKenney & Reeves, 2019). The primary focus of the study was not to test causal relationships or compare experimental conditions, but to explore how instructional design grounded in Visible Learning and Assessment for Learning (AfL) could be embedded within routine teaching practice.

A practice-based approach was selected to ensure that the study reflects real educational conditions, where teaching, learning, and assessment occur within existing course structures and institutional requirements. In this study, the instructional model was implemented as part of regular classroom teaching in a graduate-level course, allowing for the observation of learning processes in a naturalistic setting. This enhances ecological validity and supports the generation of context-sensitive insights into teaching and learning practices.

The study was informed by design-based research (DBR) principles, which emphasize the iterative development and refinement of educational interventions in authentic settings (Design-Based Research Collective, 2003; Anderson & Shattuck, 2012; McKenney & Reeves, 2019). In line with DBR, the instructional design was not treated as a fixed intervention but as an evolving framework that was enacted and reflected upon within the classroom. This approach enabled the researcher to examine how the integration of Visible Learning and AfL functioned in practice, particularly in relation to feedback processes, student engagement, and self-regulated learning.

A mixed-methods approach was employed to capture the complexity of learning processes and instructional implementation. Quantitative data were used to describe patterns in student perceptions and learning behaviors, while qualitative data provided in-depth insights into classroom interactions, feedback use, and reflective practices. The integration of these data sources enabled a more comprehensive understanding of how the instructional model supported learning in context.

Importantly, this study does not claim generalizable causal effects but instead aims to provide theoretically informed and practically grounded insights into the implementation of Visible Learning in higher education. By combining a practice-based perspective with DBR principles and mixed-methods data, the study contributes to bridging the gap between educational theory and classroom practice.

3.2 Context and Participants

The study was conducted within the context of regular classroom instruction in the graduate-level course 0308513: Assessment for Learning and Educational Quality Assurance, offered in the Faculty of Education during the second semester of the 2025 academic year. The course focuses on developing students' competencies in formative assessment, feedback practices, and educational quality assurance, including the design and application of assessment tools, interpretation of assessment data, and the use of evaluation to improve teaching and learning.

The participants consisted of 30 master's degree students enrolled in a single intact classroom group. These students represented a typical graduate-level cohort, characterized by diverse academic backgrounds, professional experiences, and levels of prior knowledge related to assessment and educational practice. The use of an intact group reflects authentic classroom conditions, where instructional design must accommodate variation in learner characteristics and support collaborative learning processes.

The implementation of the instructional design took place during Weeks 8–15 of the semester. This period corresponds to the advanced phase of the course, as defined in the course specification (TQF3), where students engage in higher-order learning activities such as analysis of assessment data, development of evaluation frameworks, and application of assessment for improving instructional quality. Focusing on this phase allowed for the integration of Visible Learning and Assessment for Learning (AfL) principles into complex, practice-oriented learning tasks.

Importantly, the study was conducted within routine teaching practice and did not involve the creation of control or comparison groups. The instructional model was embedded within the existing course structure, ensuring alignment with learning objectives, assessment requirements, and institutional guidelines. This approach enhances ecological validity and supports the examination of how the instructional design functions within real educational contexts.

The instructor assumed a dual role as both teacher and designer of the instructional approach, facilitating learning activities, providing formative feedback, and guiding students through iterative cycles of learning, reflection, and improvement. This dual role is consistent with practice-based and design-oriented research approaches, where instructional innovation is developed and examined within authentic classroom environments.

3.3 Instructional Design

The instructional design of this study was grounded in the principles of Visible Learning and Assessment for Learning (AfL), with the aim of making learning processes explicit and supporting student engagement in feedback and reflection. The design operationalized key

components of Visible Learning—learning intentions, success criteria, feedback, and reflection—within the structure of regular classroom teaching (Hattie, 2009, 2012, 2023).

First, learning intentions were explicitly communicated at the beginning of each instructional session. These learning intentions clarified the expected knowledge, skills, and competencies that students were to develop, enabling them to understand the purpose of learning activities and align their efforts accordingly. In addition, success criteria were provided to define what constituted high-quality performance. These criteria served as reference points for both students and the instructor, supporting shared understanding of expectations and facilitating more effective feedback processes.

Second, the instructional design incorporated continuous feedback cycles, which were central to both Visible Learning and AfL. Feedback was provided through multiple sources, including instructor feedback, peer feedback, and self-assessment. These feedback interactions occurred throughout the learning process rather than at the end of instruction, enabling students to identify gaps in their understanding and make ongoing improvements (Hattie & Timperley, 2007; Carless & Boud, 2018). The design emphasized feedback as an iterative process, where students were encouraged not only to receive feedback but also to interpret and apply it in subsequent learning tasks.

Third, reflection was integrated as a key component of the instructional process to support the development of self-regulated learning (SRL). Students were guided to reflect on their learning in relation to the stated learning intentions and success criteria, as well as on the feedback they received. These reflective activities enabled students to evaluate their performance, identify areas for improvement, and adjust their learning strategies (Zimmerman, 2002; Panadero et al., 2018).

Importantly, these components were not implemented as isolated elements but were integrated into an iterative learning cycle. Each instructional sequence involved clarifying goals, engaging in learning activities, receiving feedback, and reflecting on learning outcomes. This cyclical structure aligns with both Visible Learning and SRL frameworks, emphasizing continuous learning and improvement.

The instructional design was aligned with the course requirements and learning outcomes specified in the TQF3, ensuring that the implementation remained consistent with institutional expectations. At the same time, the design provided flexibility for adaptation to classroom dynamics and student needs, reflecting the principles of practice-based and design-oriented research.

Overall, the instructional design created a structured yet flexible learning environment that supported active student engagement, meaningful use of feedback, and the development of self-regulated learning within authentic classroom practice.

3.4 Data Collection

To obtain a comprehensive understanding of the implementation of Visible Learning within the graduate classroom, multiple data sources were collected using a mixed-methods approach. This approach aligns with practice-based and design-informed research, which emphasizes the use of diverse forms of evidence to capture the complexity of learning processes in authentic contexts (McKenney & Reeves, 2019).

First, a student perception survey was administered to examine students' experiences of the instructional design. The survey focused on key dimensions aligned with Visible Learning and Assessment for Learning (AfL), including clarity of learning goals, usefulness of feedback, engagement in learning activities, and perceived learning benefits. Responses were collected using a five-point Likert scale, allowing for the analysis of patterns in student perceptions.

Second, classroom observations were conducted throughout the implementation period to capture student engagement, participation patterns, and interactions during learning activities. Observational data focused on how students responded to learning intentions, engaged in feedback processes, and participated in collaborative and reflective activities. Field notes were recorded systematically to document key events and instructional dynamics.

Third, reflective journals were collected to provide insights into students' learning processes. Students were encouraged to reflect on their learning in relation to learning goals, feedback received, and their own progress. These reflections provided valuable qualitative data on how students interpreted and used feedback, as well as how they developed self-regulated learning strategies.

The combination of these data sources enabled triangulation, allowing for a more comprehensive understanding of how the instructional design influenced student learning processes within the classroom context.

3.5 Implementation Process

The implementation of the instructional design was conducted over an eight-week period (Weeks 8–15) as part of regular classroom instruction. The process followed an iterative learning cycle aligned with Visible Learning and Assessment for Learning (AfL), consisting of goal clarification, evidence generation, feedback, reflection, and learning adjustment.

Week 8: Introduction to Learning Intentions and Success Criteria

The implementation began with the explicit introduction of learning intentions and success criteria. Students were oriented to the expectations of the course and the structure of learning activities. Emphasis was placed on understanding what constitutes quality work and how learning would be evaluated.

Week 9: Elicitation of Learning Evidence

Students engaged in initial learning tasks designed to generate evidence of their understanding. Activities included analysis of assessment practices and discussion-based tasks. The focus was on making student thinking visible.

Week 10: Feedback and Peer Interaction

Instructor and peer feedback were introduced as central components of the learning process. Students exchanged feedback on their work, focusing on alignment with success criteria. This stage emphasized feedback as a dialogic process (Carless & Boud, 2018).

Week 11: Application and Revision

Students revised their work based on feedback received. This stage highlighted the importance of feedback use, encouraging students to identify gaps and improve their performance through iterative learning cycles.

Week 12: Reflection and Self-Assessment

Structured reflection activities were implemented, requiring students to evaluate their learning in relation to learning goals and feedback. This phase supported the development of self-regulated learning (Zimmerman, 2002; Panadero et al., 2018).

Week 13: Advanced Application and Integration

Students engaged in more complex tasks, including the design of assessment tools and quality assurance frameworks. Feedback and reflection continued to play a central role, supporting deeper learning.

Week 14: Consolidation of Learning

Students synthesized their learning through project-based activities. Feedback cycles were maintained, with a focus on refining understanding and improving the quality of work.

Week 15: Final Reflection and Evaluation

The implementation concluded with comprehensive reflection activities, where students evaluated their learning processes, feedback use, and development of self-regulated learning. This stage emphasized metacognitive awareness and learning transfer.

Iterative Feedback Cycle

Throughout the implementation, a continuous feedback cycle was embedded within each instructional session. This cycle consisted of:

1. Clarification of learning intentions and success criteria

2. Engagement in learning activities to generate evidence
3. Provision of feedback (teacher and peer)
4. Student interpretation and use of feedback
5. Reflection and learning adjustment

This iterative process reflects the integration of Visible Learning and AfL principles, supporting ongoing learning and the development of self-regulated learning. Feedback was not treated as a one-time event but as a continuous process that guided student learning across the implementation period (Hattie & Timperley, 2007; Boud et al., 2024).

Overall, the implementation process demonstrates how structured instructional design can operationalize Visible Learning within authentic classroom practice, enabling sustained engagement, feedback use, and reflective learning.

3.6 Data Analysis

Data analysis in this study was conducted using a mixed-methods approach to provide a comprehensive understanding of how the implementation of Visible Learning influenced student learning processes in the classroom context. The integration of quantitative and qualitative data allowed for the identification of both general patterns and in-depth insights into student engagement, feedback use, and self-regulated learning (McKenney & Reeves, 2019).

Quantitative data, derived from the student perception survey, were analyzed using descriptive statistics, including mean (M) and standard deviation (SD). These measures were used to examine overall patterns in students' perceptions of the instructional design, particularly in relation to clarity of learning goals, usefulness of feedback, engagement in learning activities, and perceived learning benefits. The use of descriptive statistics is appropriate for practice-based research, where the focus is on identifying trends and patterns rather than testing causal relationships.

Qualitative data, collected from classroom observations and reflective journals, were analyzed using thematic analysis following the procedures outlined by Braun and Clarke (2006). The analysis involved several stages, including familiarization with the data, initial coding, identification of patterns, development of themes, and refinement of thematic categories. This process enabled the identification of recurring patterns related to student engagement, feedback interaction, and reflective learning.

The integration of quantitative and qualitative findings was conducted through triangulation, allowing for a more comprehensive interpretation of the data. Quantitative results provided an overview of student perceptions and learning patterns, while qualitative data offered contextual explanations of how and why these patterns emerged. For example, high levels of perceived feedback usefulness were interpreted alongside qualitative evidence of students actively engaging with feedback and revising their work.

To enhance the rigor and trustworthiness of the analysis, multiple strategies were employed. These included data triangulation across different sources, systematic coding procedures for qualitative data, and alignment of analysis with the conceptual framework of Visible Learning, AfL, and self-regulated learning. In addition, the analysis was conducted iteratively throughout the implementation process, allowing emerging insights to inform ongoing interpretation.

Overall, the data analysis approach enabled a nuanced understanding of how the instructional design functioned in practice, providing both descriptive and interpretive insights into student learning processes in an authentic classroom setting.

4. Results

This section presents the findings from the implementation of Visible Learning within the graduate-level course, based on the integration of quantitative and qualitative data. The results are organized into three main areas: student engagement, student perceptions of instructional design, and learning processes related to feedback and self-regulated learning.

4.1 Student Engagement and Participation

The findings indicate that the implementation of Visible Learning principles supported high levels of student engagement and active participation throughout the instructional period. Classroom observation data revealed that students were consistently involved in learning activities, particularly in collaborative discussions, problem-solving tasks, and peer interaction.

Students demonstrated active participation in tasks designed to elicit evidence of learning, reflecting the emphasis on making learning visible. Engagement was particularly evident during activities that required students to interpret learning goals, apply success criteria, and provide feedback to peers. These patterns suggest that the instructional design successfully created opportunities for students to engage meaningfully in the learning process.

Qualitative data from classroom observations further indicated that student engagement was sustained across the implementation period, rather than limited to isolated activities. This sustained engagement reflects the effectiveness of embedding iterative learning cycles within routine classroom practice.

4.2 Student Perceptions of the Instructional Design

Quantitative data from the student perception survey indicated high levels of agreement across key dimensions of instructional design. Students reported strong agreement regarding the clarity of learning intentions, the usefulness of feedback, their engagement in learning activities, and the perceived benefits of the learning process.

The high ratings for clarity of learning goals suggest that students were able to understand what they were expected to learn and how their performance would be evaluated. Similarly, the perceived usefulness of feedback indicates that students recognize feedback as a valuable component of their learning.

These findings are consistent with the principles of Visible Learning and Assessment for Learning, which emphasize clarity and feedback as central elements of effective instruction. The results suggest that the instructional design was successful in operationalizing these principles within the classroom context.

4.3 Feedback Use and Learning Processes

Qualitative data from reflective journals and classroom observations revealed that students actively engaged with feedback throughout the implementation. Students reported using feedback to revise their work, improve their understanding, and guide subsequent learning tasks.

The findings indicate that feedback was not merely received but was actively interpreted and applied, reflecting the development of feedback literacy. Students demonstrated the ability to identify gaps in their performance and take action to address them, which aligns with the principles of formative assessment.

Furthermore, the iterative nature of feedback cycles allowed students to engage in continuous improvement. Feedback interactions between instructors and students, as well as among peers, contributed to a feedback-rich learning environment that supported ongoing learning processes.

4.4 Development of Self-Regulated Learning

The findings also suggest that the instructional design supported the development of self-regulated learning (SRL). Reflective data indicated that students engaged in key SRL processes, including goal-setting, monitoring of learning progress, and reflection on outcomes.

Students demonstrated increased awareness of their learning processes, particularly in relation to how feedback informed their learning strategies. Reflection activities encouraged students to evaluate their performance and adjust their approach, indicating the development of metacognitive skills.

These findings suggest that the integration of Visible Learning and AfL created conditions that supported the emergence of self-regulated learning within the classroom.

4.5 Summary of Findings

Overall, the results indicate that the implementation of Visible Learning within the graduate classroom was feasible and effective in supporting key learning processes. The instructional design promoted active student engagement, facilitated meaningful use of feedback, and contributed to the development of self-regulated learning.

The integration of learning intentions, success criteria, feedback, and reflection created a structured yet flexible learning environment that aligned with both Visible Learning and AfL principles. These findings demonstrate that Visible Learning can be effectively embedded within routine classroom practice in higher education.

5. Discussion

This study examined the implementation of Visible Learning within a graduate-level classroom context, with a particular focus on how instructional design grounded in Assessment for Learning (AfL) influenced student engagement, feedback use, and self-regulated learning. The findings provide important insights into how theoretical principles of Visible Learning can be operationalized in authentic higher education settings.

5.1 Visible Learning and Student Engagement

The findings indicate that the integration of learning intentions, success criteria, and structured learning activities supported high levels of student engagement. This result is consistent with the core premise of Visible Learning, which emphasizes the importance of clarity in enhancing student understanding and participation (Hattie, 2009, 2012, 2023).

The observed engagement was not limited to behavioral participation but extended to cognitive and interactive dimensions, particularly during collaborative and problem-based activities. This suggests that making learning goals explicit and aligning them with classroom activities can facilitate deeper engagement, supporting prior research that highlights teacher clarity as a key factor in effective learning environments.

Importantly, the sustained engagement observed across the implementation period indicates that engagement was not driven by isolated activities but by the structure of the instructional design itself. This supports the argument that engagement is a product of pedagogical design rather than solely a characteristic of individual learners.

5.2 Feedback as a Central Mechanism for Learning

A central finding of this study is the role of feedback as a key mechanism linking instructional design and student learning. The results demonstrate that students actively engaged with feedback and used it to improve their work, aligning with the conceptualization of feedback as a process rather than a product (Carless & Boud, 2018; Boud et al., 2024).

The iterative feedback cycles embedded within the instructional design appear to have facilitated continuous learning, enabling students to identify gaps in their understanding and take corrective action. This finding reinforces the theoretical framework proposed by Hattie and Timperley (2007), which highlights feedback as a mechanism for answering the questions of “Where am I going?”, “How am I going?”, and “What are the next steps?”.

Furthermore, the findings suggest that feedback effectiveness is closely linked to students’ ability to interpret and apply feedback, reflecting the concept of feedback literacy (Carless & Boud, 2018; Molloy et al., 2020). The active use of feedback observed in this study indicates that the instructional design successfully supported students in developing these capabilities.

5.3 Development of Self-Regulated Learning

The study also provides evidence that the implementation of Visible Learning and AfL supported the development of self-regulated learning (SRL). Students demonstrated engagement in key SRL processes, including goal-setting, monitoring, and reflection, which are central to SRL frameworks (Zimmerman, 2002; Panadero et al., 2018).

The integration of reflection activities and feedback processes appears to have played a critical role in this development. By engaging students in iterative cycles of learning and reflection, the instructional design created conditions that supported metacognitive awareness and learner autonomy.

This finding aligns with previous research indicating that formative assessment practices can serve as external supports that gradually foster internal self-regulation processes (Panadero et al., 2018; Broadbent & Poon, 2024). In this study, the alignment between Visible Learning and AfL appears to have strengthened this process by providing both structure and opportunities for learner agency.

5.4 Integration of Visible Learning and AfL in Higher Education

A key contribution of this study lies in demonstrating how Visible Learning can be effectively integrated with AfL within a higher education context. While previous research has highlighted the potential of these frameworks, their implementation in university settings has remained limited (Viberg et al., 2024).

The findings suggest that the integration of Visible Learning and AfL provides a coherent and practical approach to instructional design. Visible Learning offers the structural components of clarity and goal orientation, while AfL provides the mechanisms for feedback and learner engagement. Together, these frameworks create a feedback-rich learning environment that supports continuous learning and improvement.

Importantly, this study shows that such integration can be achieved within routine classroom practice, without the need for experimental interventions or significant structural changes. This highlights the practical applicability of the approach and its potential for broader implementation in higher education.

5.5 Implications for Teaching and Learning

The findings of this study have several implications for educational practice. First, they demonstrate that effective implementation of Visible Learning requires intentional instructional design that integrates learning goals, feedback, and reflection. Simply adopting the terminology of Visible Learning is insufficient without corresponding changes in classroom practice.

Second, the study highlights the importance of feedback as a central component of learning. Educators should focus not only on providing feedback but also on supporting students in using feedback effectively. This includes creating opportunities for iterative feedback cycles and fostering feedback literacy.

Third, the findings suggest that the development of self-regulated learning can be supported through structured instructional approaches. By embedding reflection and feedback within learning activities, educators can create environments that promote learner autonomy and metacognitive development.

5.6 Limitations and Future Research

Despite its contributions, this study has several limitations. The study was conducted within a single course and institutional context, which may limit the transferability of the findings. In addition, the study focused on learning processes rather than causal effects, and therefore does not provide evidence of impact in terms of comparative outcomes.

Future research may extend this work by examining the implementation of Visible Learning across different disciplines and educational contexts. Longitudinal studies could also explore the sustained development of self-regulated learning over time. Furthermore, future studies may investigate how digital technologies and learning analytics can enhance feedback processes within Visible Learning frameworks.

5.7 Conclusion of the Discussion

In conclusion, the findings of this study suggest that Visible Learning, when integrated with Assessment for Learning, provides a powerful framework for supporting student engagement, feedback use, and self-regulated learning in higher education. The study contributes to bridging the

gap between theory and practice by demonstrating how these principles can be embedded within authentic classroom contexts.

The results highlight that effective learning is not solely dependent on instructional content but on the design of learning processes that make learning visible, actionable, and reflective. This underscores the importance of pedagogical design in shaping meaningful learning experiences in contemporary higher education.

6. Conclusion

This study examined the implementation of Visible Learning within a graduate-level classroom, focusing on how instructional design grounded in Assessment for Learning (AfL) can be embedded in routine teaching practice. The findings demonstrate that Visible Learning principles—particularly clarity of learning goals, success criteria, feedback, and reflection—can be effectively operationalized within authentic higher education contexts.

The study provides evidence that a structured instructional design integrating Visible Learning and AfL supports key learning processes, including student engagement, active use of feedback, and the development of self-regulated learning. Rather than functioning as isolated strategies, these elements operate as an interconnected system that promotes continuous and iterative learning.

A key contribution of this study lies in demonstrating how Visible Learning can be translated from a theoretical framework into practical classroom implementation. By aligning instructional design with course requirements and embedding feedback cycles within routine teaching, the study offers a context-sensitive approach that is both pedagogically grounded and practically feasible.

Importantly, the findings highlight that the effectiveness of Visible Learning is not dependent on the introduction of new technologies or external interventions, but on the intentional design of learning processes that make learning explicit, feedback actionable, and reflection integral to learning. This has significant implications for higher education, where instructional practices often remain content-driven and summative in nature.

From a theoretical perspective, the study contributes to the growing body of research that integrates Visible Learning, Assessment for Learning, and self-regulated learning. It demonstrates how these frameworks can be combined to create feedback-rich learning environments that support learner autonomy and deeper learning.

However, the study is limited to a single course context and focuses on learning processes rather than causal outcomes. Future research may extend this work by examining the scalability of the approach across disciplines, exploring long-term impacts on self-regulated learning, and integrating digital tools to enhance feedback processes.

In conclusion, this study highlights the potential of Visible Learning as a practical and sustainable approach for improving teaching and learning in higher education. By emphasizing clarity, feedback, and reflection, educators can design learning environments that support meaningful, active, and self-regulated learning.

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